

PROPOSED AMENDMENTS TO INDEPENDENT CLAIMS**Serial No.: 09/595,583; Docket No.: 30-5074(4015)**

1. A method of generating information about particulates present in a fluid utilizing a microscope, comprising:

providing a substrate having comprising a first shade;

filtering the fluid through the substrate, the particulates being retained on the substrate during the filtering, the filtering imparting a second shade to at least a fraction of the substrate;

after the filtering, scanning across at least a portion of the substrate with a microscope, the scanning comprising automated displacement of the substrate relative to an observing portion of the microscope along a pattern, the microscope obtaining data about said particulates at locations along the pattern;

digital image processing of the data obtained by the microscope to generate information about said particulates; and

determining a contrast of two or more of the particulates relative to the fraction of the substrate comprising the second shade.

9. A method of generating information about materials present in a composition utilizing a microscope, comprising:

providing a composition having a purity of at least 99.995%;

utilizing a reagent to dissolve at least a portion of the composition and thereby form a mixture;

filtering the mixture through a substrate, at least some components of the mixture being retained on the substrate during the filtering;

after the filtering, scanning across at least a portion of the substrate with a microscope to obtain one or more images of the substrate; and

digital image processing of the one or more images to generate information about said retained components, at least some of the generated information relating to a relative contrast of the components.

14. A method of generating information about materials present in a composition utilizing a microscope, comprising:

utilizing a reagent to disperse a first portion of the composition and thereby form a first solution comprising a dispersion of undissolved material;

filtering the first solution through a first substrate, at least some of the undissolved material being retained on the first substrate during the filtering;

forming a second solution comprising a dispersion of undissolved material from a second portion of the composition;

filtering the second solution through a second substrate, at least some undissolved material being retained on the second substrate;

scanning across at least a portion of the first substrate with a microscope, the scanning comprising automated displacement of the first substrate relative to

an observing portion of the microscope along a grid pattern, the microscope obtaining a first set of data about said retained undissolved material at locations along the grid pattern, at least some of the obtained first set of data relating to a relative contrast of the retained undissolved material;

scanning across at least a portion of the second substrate with a microscope, the scanning comprising automated displacement of the second substrate relative to an observing portion of the microscope along a grid pattern, the microscope obtaining a second set of data about said retained undissolved material at locations along the grid pattern, at least some of the obtained second set of data relating to a relative contrast of the retained undissolved material;

processing the first set of data and the second set of data obtained by the microscope to generate information about one or more of the size, shape, type and quantity of undissolved material, undissolved material type being related to at least one of a conductivity, an oxide content and a carbon content of the undissolved material; and

depth profiling the composition, the depth profiling comprising comparing information generated from the first substrate set of data to information generated from the second set of data substrate.

35. A method of generating information about materials present in a composition utilizing a microscope, comprising:

providing a composition comprising at least one of Sb, Pb and Sn;

selectively dissolving some components of the composition in a reagent while leaving other components undissolved;

collecting at least some of the undissolved components on a filter surface;

scanning across at least a portion of the filter surface with a light microscope, the scanning comprising automated displacement of the filter surface relative to an observing portion of the microscope along a grid pattern, the microscope obtaining data about scattering of light by the undissolved components on the filter surface, the undissolved components comprising at least two types, a first of the two types being darker than a background defined by the filter surface and a second of the two types being lighter than the background; and

digital image processing of the data obtained by the microscope to generate information about one or more of the size, quantity and aspect ratio of the undissolved components; the processing comprising a sort of the undissolved components amongst the two types.

40. A method of generating information about impurities present in a metal composition utilizing a microscope, comprising:

utilizing a reagent to selectively dissolve a portion of the composition relative to at least some impurities present in the metal composition, the dissolved portion forming a solution with the reagent; the impurities being at least two different types; on of the at least two types being a first type comprising a

first material, and another of the at least two types being a second type comprising a second material, the second material differing from the first material;

filtering the solution through a substrate, at some of the first and second types of the impurities being retained on the substrate during the filtering;

after the filtering, modifying a light absorbing property of at least some of the impurities retained on the substrate;

scanning across at least a portion of the substrate with a light microscope, the scanning comprising automated displacement of the substrate relative to an observing portion of the microscope along a grid pattern, the microscope obtaining data about the impurities at locations along the grid pattern, the data including a relative darkness of the impurities relative to a background defined by the substrate; the first type of impurities being darker than the background and the second type of impurities being lighter than the background; and

processing the data obtained by the microscope to generate information about the size, quantity and type of the impurities.